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3150 2756A>G D919G  
3207 2813G>T S938I  
3209 2815G>C G939R  
5444 5050C>A 3'  
5551 5157G>A 3'  
5573 5179C>T 3'  
5659 5265T>C 3'  
5678 5284T>C 3'  
5874 5480C>T 3'  
5934 5540A>G 3'  
D78586 D78586 114010 GEN-BR CAD PROTEIN  
3434 3408C>T Silent  
4313 4287T>C Silent  
4799 4773A>G Silent  
5255 5229C>T Silent  
5455 5429G>A R1810Q  
5507 5481T>C Silent  
5810 5784C>T Silent  
6128 6102C>T Silent  
6626 6600C>T Silent  
6686 6660C>T Silent  
U09178 U09178 274270 GEN-HA  
Dihydropyrimidine Dehydrogenase  
166 85T>C C29R  
577 496A>G M166V  
638 557A>G Y186C  
1708 1627A>G I543V  
3432 3351T>C 3'  
3682 3601C>T 3'  
3730 3649G>A 3'  
3925 3844A>G 3'  
3937 3856T>C 3'  
U19720 U19720 600424 GEN-I1 Folate  
Transporter (SLC19A1)  
175 80G>A R27H  
341 246C>G Silent  
791 696C>T Silent  
1067 972G>A Silent  
1337 1242C>A Silent  
1997 1902T>C 3'  
2100 2005^2006insG 3'  
2582 2487T>G 3'  
2617 2522C>T 3'  
2652 2557T>C 3'

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U92868 U92868 600424 GEN-LUK Homo sapiens reduced  
folate carrier (RFC1) gene, exons 1a, 1c and 1b

|     |        |        |
|-----|--------|--------|
| 431 | 431A>G | Intron |
| 441 | 441A>G | Intron |
| 498 | 498C>T | Intron |
| 579 | 579G>C | Intron |
| 599 | 599G>C | Intron |

X02308 X02308 188350 GEN-KL Thymidylate  
synthetase

|      |         |    |
|------|---------|----|
| 1066 | 961T>C  | 3' |
| 1136 | 1031A>G | 3' |
| 1497 | 1392T>A | 3' |

D00517 D00517 188350 GEN-LUC Thymidylate  
synthase, promoter

|     |          |        |
|-----|----------|--------|
| 276 | 276C>T   | Intron |
| 321 | 321T>C   | Intron |
| 452 | 452G>A   | Intron |
| 457 | 457^insC | Intron |
| 491 | 491C>A   | Intron |
| 533 | 533T>C   | Intron |
| 624 | 624A>C   | Intron |
| 639 | 639A>G   | Intron |
| 655 | 655T>C   | Intron |

D00596 D00596 188350 GEN-LUD Homo sapiens  
gene for thymidylate synthase, exons 1, 2, 3, 4, 5, 6, 7,  
complete cds

|      |         |        |
|------|---------|--------|
| 701  | 701A>C  | Intron |
| 716  | 716A>G  | Intron |
| 732  | 732T>C  | Intron |
| 1293 | 1293A>G | Intron |
| 1322 | 1322C>G | Intron |
| 1379 | 1379T>C | Intron |
| 1590 | 1590C>T | Intron |
| 1688 | 1688C>G | Intron |
| 2401 | 2401A>G | Intron |
| 2429 | 2429G>A | Intron |
| 2488 | 2488C>T | Intron |
| 2594 | 2594G>T | Intron |
| 2618 | 2618G>A | Intron |
| 3083 | 3083G>A | Intron |
| 3125 | 3125G>A | Intron |
| 3212 | 3212C>T | Intron |
| 3619 | 3619T>A | Intron |
| 3635 | 3635G>A | Intron |
| 4256 | 4256G>A | Intron |

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E/

|              |             |                |
|--------------|-------------|----------------|
| 4898         | 4898A>G     | Intron         |
| 5006         | 5006C>T     | Intron         |
| 5062         | 5062G>A     | Intron         |
| 5167         | 5167G>A     | Intron         |
| 11069        | 11069A>G    | Intron         |
| 11238        | 11238C>T    | Intron         |
| 11293        | 11293T>G    | Intron         |
| 11422        | 11422T>C    | Intron         |
| 11686        | 11686C>T    | Intron         |
| 12598        | 12598T>C    | Intron         |
| 13171        | 13171T>C    | Intron         |
| 13298        | 13298G>A    | Intron         |
| 13645        | 13645T>C    | Intron         |
| 13751        | 13751C>A    | Intron         |
| 13782        | 13782T>C    | Intron         |
| 13806        | 13806T>C    | Intron         |
| 13813        | 13813T>C    | Intron         |
| 14479        | 14479A>G    | Intron         |
| 14546        | 14546^insT  | Intron         |
| 14585        | 14585C>T    | Intron         |
| 14729        | 14729G>A    | Intron         |
| 14787        | 14787C>T    | Intron         |
| 14795        | 14795G>A    | Intron         |
| 15041        | 15041T>C    | Intron         |
| 15343        | 15343G>A    | Intron         |
| 15449        | 15449G>A    | Intron         |
| 15502        | 15502G>A    | Intron         |
| 15545        | 15545C>T    | Intron         |
| 15589        | 15589A>G    | Intron         |
| 15769        | 15769C>T    | 3'             |
| 15839        | 15839A>G    | 3'             |
| 16148        | 16148G>A    | 3'             |
| 16198        | 16198T>G    | 3'             |
| 16202        | 16202G>T    | Intron         |
| X59618       | X59618      | 180390         |
| reductase M2 | polypeptide | GEN-M3         |
|              |             | Ribonucleotide |
| 128          | (-67)G>A    | 5'             |
| 189          | (-6)T>G     | 5'             |
| 524          | 330C>G      | Silent         |
| 1399         | 1205T>A     | 3'             |
| 1464         | 1270G>A     | 3'             |
| 1636         | 1442C>T     | 3'             |
| 1738         | 1544C>T     | 3'             |
| 2259         | 2065T>C     | 3'             |

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|  |        |            |         |              |
|--|--------|------------|---------|--------------|
| S72487   | S72487 | 131222     | GEN-3LD | Thymidine    |
| phosphorylase, partial   |        |            |         |              |
| 183  |        | 19G>A      |         | D7N          |
| 483  |        | 319C>T     |         | 3'           |
| 601  |        | 437G>C     |         | 3'           |
| 1299   |        | 1135G>A    |         | 3'           |
| M58602   | M58602 | 131222     | GEN-LUB | Thymidine    |
| phosphorylase, promoter and genomic                                    |        |            |         |              |
| 124  |        | 124C>T     |         | 3'           |
| 439  |        | 439G>A     |         | 3'           |
| 1044   |        | 1044^insCT |         | 3'           |
| 1331   |        | 1331G>A    |         | 3'           |
| 1977   |        | 1977G>A    |         | Intron       |
| 2149   |        | 2149G>A    |         | Intron       |
| 2467   |        | 2467A>G    |         | Intron       |
| 2634   |        | 2634C>G    |         | Intron       |
| 2975   |        | 2975G>A    |         | Intron       |
| 3116   |        | 3116G>T    |         | Intron       |
| 3255   |        | 3255A>C    |         | Intron       |
| 3344   |        | 3344T>C    |         | Intron       |
| 4051   |        | 4051C>A    |         | Intron       |
| 4782   |        | 4782G>A    |         | Intron       |
| 5022   |        | 5022T>C    |         | Intron       |
| 5266   |        | 5266G>A    |         | Intron       |
| 5285   |        | 5285C>G    |         | Intron       |
| 5438   |        | 5438T>A    |         | Intron       |
| 5482   |        | 5482C>T    |         | Intron       |
| 5629   |        | 5629G>A    |         | Intron       |
| 5648   |        | 5648C>T    |         | Intron       |
| 5731   |        | 5731G>A    |         | Intron       |
| M98045   | M98045 | 136510     | GEN-4C3 | Homo sapiens |
| folylpolyglutamate synthetase mRNA, complete cds                       |        |            |         |              |
| 802  |        | 732C>T     |         | Silent       |
| 1747   |        | 1677G>T    |         | 3'           |
| 1900   |        | 1830T>C    |         | 3'           |
| U24253   | U24253 | 136510     | GEN-LUE | Human        |
| folylpolyglutamate synthetase (FPGS) gene, exons 5-11, and partial cds |        |            |         |              |
| 1424   |        | 1424C>A    |         | Intron       |
| 1649   |        | 1649G>A    |         | Intron       |
| 2554   |        | 2554A>G    |         | Intron       |
| U24252   | U24252 | 136510     | GEN-LUF |              |
| Folylpolyglutamate synthetase, promoter and exons 1-4                  |        |            |         |              |
| 263  |        | 263A>G     |         | Intron       |
| 266  |        | 266G>T     |         | Intron       |

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527 527C>G Intron  
1037 1037A>G 5'  
1139 1139G>A Intron  
1217 1217C>T Intron  
1647 1647C>T Intron  
1955 1955G>A Intron  
2017 2017G>A Intron  
2037 2037G>A Intron  
2189 2189A>G Intron  
2282 2282C>T Intron  
2309 2309A>G Intron

U09806 U09806 236250 GEN-4FZ Human  
methylenetetrahydrofolate reductase mRNA, partial cds (SEQ ID  
NO:1)

120 120T>C Silent  
464 464T>G M155R  
519 519C>T Silent  
668 668C>T A223V  
1059 1059T>C Silent  
1289 1289C>A 3'  
1308 1308T>C 3'  
1784 1784G>A 3'

AF061655 AF061655 123920 GEN-LUJ Cytidine  
deaminase, promoter

575 575T>C Intron  
648 648T>C Intron  
771 771G>C Intron  
883 883G>A Intron  
941 941^insC 5'  
1051 1051A>C K27Q

In the Claims:

Please amend claims 182-201 as follows:

182. (Amended) An isolated nucleic acid probe comprising at least 15 contiguous nucleotides of the nucleotide sequence of SEQ ID NO:1 (methylenetetrahydrofolate reductase), the probe comprising at least one of: